

**REMARKS****Indication of Allowable Subject Matter**

Applicant greatly appreciates the Examiner's statement in the Office Action of Jul. 26, 2005 in which claims 10-15 have been indicated as allowed and claims 8 and 9 are indicated to contain allowable subject matter.

**Response To Reminder Of Abstract Format**

The Office Action of Jul. 26, 2005 reminded Applicant the proper language and format for an abstract of the disclosure. A new abstract with less than 150 words is provided in this response. Applicant believes this new abstract fulfills the language and format requirement for an abstract.

**Response To Objections/Rejections**

The Office Action rejected claims 1-6 under 35 U.S.C. §102(b) as allegedly anticipated by *Hsieh I* (USP 6,441,429) and claim 7 under 35 U.S.C. §103(a) as being obvious over *Hsieh I* in view of *Hsieh II* (USP 6,159,801). Applicant has amended claim 1 and traverses the rejections because *Hsieh I*, *Hsieh II* or the combination does not disclose all the steps of each pending claim.

**Response To Claim Rejections Under 35 U.S.C. §102**

The Office Action rejected claims 1-6 under 35 U.S.C. §102(b) as allegedly anticipated by *Hsieh I* (USP 6,441,429). Applicant traverses the rejections because *Hsieh I* does not disclose all the steps of each pending claim.

For a proper rejection of a claim under 35 U.S.C. Section 102(b), the cited reference must disclose all elements/features/steps of the claim. See, e.g., E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 7 USPQ2d 1129 (Fed. Cir. 1988).

Independent 1, as currently amended, states:

1. A method to form MOS gates in an integrated circuit device comprising:

forming a dielectric layer overlying a substrate;  
forming a polysilicon layer overlying said dielectric layer;  
forming a silicon oxide layer overlying said polysilicon layer;  
forming a patterned masking layer overlying and *selectively exposing* *said silicon oxide layer*,  
thereafter oxidizing said polysilicon layer to *increase thickness of said exposed silicon oxide layer* wherein said thickened silicon oxide layer encroaches under the edges of said masking layer and wherein said silicon oxide layer does not thicken under other interior areas of said masking layer;  
thereafter removing said masking layer;  
thereafter etching said silicon oxide layer to selectively expose said polysilicon layer where said silicon oxide layer did not thicken; and  
thereafter etching through said exposed polysilicon layer to thereby form MOS gates in the manufacture of said integrated circuit device;  
*wherein before oxidizing said polysilicon layer, said silicon oxide layer is not etched through.*

(*Emphasis added.*) Independent claim 1 is allowable for at least the reason that *Hsieh I* does not disclose, teach, or suggest the features that are highlighted in claim 1 above.

More specifically, in *Hsieh I*, before oxidizing the polysilicon layer, the silicon oxide layer is completely etched through and, therefore, cannot be exposed and thickened as required in the steps of claim 1. The Office Action in page 3 referred to Col. 5, Ln 60-67 to Col. 6, Ln 1-7 and Col. 6, Ln 18-32 of *Hsieh I* as anticipating the original features in claim 1. Furthermore, in page 3, the Office Action referred to the native oxide layer 16 (in Figs. 3A-3C of *Hsieh I*) as the silicon oxide layer of claim 1 of the current application. Col. 6, Ln 4-7 of *Hsieh I*, however, cites that as follows:

*"Below the window 17', any exposed portion of native oxide layer 16 is etched away from the surface of the first polysilicon layer 15 leaving slight depressions 15H in the surface of the first polysilicon layer 15."*

*(Emphasis added)*

Fig. 3C of *Hsieh I* shows a depression on the surface of the polysilicon layer 15, evidencing that the oxide layer 16 is completely etched through before oxidizing the polysilicon layer 15. The teaching of *Hsieh I* is just opposite to a feature in the claim 1, in which the silicon oxide layer is not etched through before oxidizing the polysilicon layer. Furthermore, if something is etched away, it disappears and cannot be exposed. Since the native oxide layer 16 of *Hsieh I* below the window 17' is etched away, the native oxide layer 16 is not exposed as required by claim 1 of the current application. Since the native oxide layer 16 of *Hsieh I* below the window 17' is etched away, it disappears and cannot be thickened. The silicon oxide 22 in Fig. 3B of *Hsieh I*, which the Office Action referred as the thickened silicon oxide layer of claim 1, does not grow from the native oxide 16, such that it cannot be the thickened silicon oxide layer of claim 1. Thus, *Hsieh I* lacks at least the highlighted in claim 1 above. Therefore, *Hsieh I* does not anticipate claim 1, and the rejection should be withdrawn.

*Hsieh II* does not disclose an oxide layer between the patterned masking layer and the polysilicon layer. There is no motivation in *Hsieh I* or *Hsieh II* to keep the native oxide layer 16 of *Hsieh I* below the window 17' so that it can be exposed and thickened as required in claim 1 of the current application. Therefore, neither *Hsieh I*, *Hsieh II*, nor their combination can render claim 1 of the current application obvious.

The unbroken silicon oxide layer overlying the polysilicon layer can enhance the encroachment of the thickened oxide layer, thereby further narrowing the space between floating gates. Such a benefit has never been mentioned or implied in the prior art of record, and,

therefore, neither *Hsieh I*, *Hsieh II*, nor their combination can render claim 1 of the current application obvious.

As independent claim 1 is allowable over the prior art of record, then its dependent claims 2-6 are also allowable as a matter of law, because these dependent claims contain all features/elements/steps of their respective independent claim. *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988).

#### Response To Claim Rejections Under 35 U.S.C. §103

Claim 7 stand rejected under 35 U.S.C. §103(a) as allegedly obvious over *Hsieh I* in view of *Hsieh II* (USP 6,159,801). As claim 1 is allowable, claim 7 is allowable as a matter of law because it contains all steps of the independent claim 1.

#### New Claims

Claims 21-25 are newly added to further define and/or clarify the scope of certain embodiments. Independent claim 21 recites:

21. A method to form MOS gates in an integrated circuit device comprising:
  - forming a dielectric layer overlying a substrate;
  - forming a polysilicon layer overlying said dielectric layer;
  - forming a patterned masking layer overlying said polysilicon layer, said patterned masking layer having an opening;
  - oxidizing through said opening said polysilicon layer to form a first silicon oxide layer at the bottom of said opening wherein said first silicon oxide layer encroaches under the edges of said masking layer;
  - removing said masking layer after formation of said first silicon oxide layer and exposing said polysilicon layer;
  - etching through said exposed polysilicon layer and using said first silicon oxide layer as a mask to thereby form MOS floating gates in the manufacture of said integrated circuit device; and
  - removing said first silicon oxide layer after said step of etching through said exposed polysilicon layer.*

*(Emphasis added)* Claim 21 is allowable for at least the reason that the prior art of record does not disclose, teach, or suggest the features that are highlighted. As independent claim 21 is allowable over the prior art of record, then its dependent claims 22-25 are allowable as a matter of law, because these dependent claims contain all features/elements/steps of their respective independent claim.

### **CONCLUSION**

In light of the foregoing amendments and for at least the reasons set forth above, Applicant respectfully submits that all objections and/or rejections have been traversed, rendered moot, and/or accommodated, and that the now pending claims 1-15 and 21-25 are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested.

If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned agent at (770) 933-9500.

Respectfully submitted,



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